

REMARKS

This Amendment is responsive to the Office Action mailed April 17, 2006 (“Office Action”).

Claim Rejections – 35 U.S.C. §102(b) and (e)

Claims 18-19 stand rejected under §102(b) as being anticipated by Abe et al. (U.S. Patent No. 6,576,203)(“Abe”).

Claim 19 recites that one of the plurality of modules has a processing core that includes an inert material for mixing components of the gas stream passing therethrough and that the module has a feed nozzle for introducing water to the gas stream. Abe does not anticipate a reactor having a plurality of modules stacked end-to-end wherein one of the modules comprises (1) an inert material for mixing the components of the gas stream passing through the module and (2) a feed nozzle for introducing water to the gas stream.

First, the Examiner has responded that the inert pellets of Abe would inherently function to mix gas streams traversing therethrough. As support for this proposition, the Examiner has referenced Corrigan et al. (U.S. Patent No. 6,140,266 at col. 2, lines 18-27). Abe does not expressly disclose that the inert pellet of Abe would function to mix gas streams traversing therethrough. The Federal Circuit provides that “[t]o serve as an anticipation when the reference (Abe) is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence (Corrigan). Such evidence (Corrigan) must make clear that the missing descriptive matter is necessarily present in the thing described in the reference.” *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 20 U.S.P.Q.2d 1746, 1749. While the Examiner asserts that “[b]oth references are analogous because they both teach catalyst bed” it is clear that Corrigan fails to provide this necessary evidence as Corrigan does not make clear that the inert pellets of Abe would necessarily function to mix gas streams traversing therethrough.

Second, the Examiner has responded that Abe teaches a module with an inlet (65) introducing reactive fluid (A) (col. 8, line 32). The Examiner has further stated that pursuant to MPEP 2115, water does not limit the apparatus claims. However, the particular element in question is defined not only with respect to its structure, but with respect to its intended function as well. Claim 19 defines the function, namely the introduction of water to the gas stream, of the particular element. The Federal Circuit provides that functional limitations are appropriate and should be considered in determining anticipation. *In re Atwood*, 354 F.2d 365, 148 U.S.P.Q. 203, 210. As a result, water does limit the claim.

Finally, while Abe teaches the use of an inert catalyst support in catalyst units (61) and (62), unlike the recitations of claims 18 and 19, the use of an inert material separate and apart from a catalyst is not taught for any purpose in Abe.

For these reasons, claim 19, and claim 18 which depends from claim 19, is not believed to be anticipated by Abe.

Claims 4, 8-14, and 20-28 stand rejected under §102(e) as being anticipated by Gonjo (U.S. Patent No. 6,159,434)(“Gonjo”).

Claim 8 and the claims which depend from claim 8 are believed to be in condition for allowance as Gonjo fails to anticipate an apparatus comprising a plurality of modules stacked end to end along a common axis that includes a first module having a partial oxidation catalyst within the processing core of that module. Gonjo does not disclose, teach, or suggest a first module having a partial oxidation catalyst within the processing core of that module (FIG. 1). In Gonjo, the gas stream flow starts at a first end (1). As shown in FIG. 1, a liquid feed heating portion 1 preheats supplied liquid feed. Col. 9, lines 47-48. Applicant respectfully disagrees with the Examiner’s assertion that Gonjo discloses, teaches, or suggests a first module having a partial oxidation catalyst within the processing core of that module. As demonstrated above, Gonjo does not explicitly disclose, teach, or suggest a first module having a partial oxidation catalyst within the processing core of that module.

As a result, claim 8, and the claims which depend from claim 8, are not believed to be anticipated by Gonjo.

Claim Rejections – 35 U.S.C. §103(a)

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gonjo as applied to claim 8, and further in view of Nishida et al. (U.S. Patent No. 5,387,399) ("Nishida"). Based on the foregoing discussion related to claim 8, claim 3 is believed to be in condition for allowance.

In addition, the Examiner has suggested that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include in each module an annual lip at either the first end or the second end of the shell and an annular recessed portion at the opposite end of the shell, and wherein the annular lip of one module is receivable into the annular recess of the adjacent module in Gonjo's modified apparatus as taught by Nishida. The Examiner provides no explanation of the suggestion or motivation to combine Gonjo and Nishida other than the assertion that "both Gonjo and Nishida teach a reactor having a plurality of modules." This assertion fails to explain the suggestion or motivation to combine the references. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Therefore, claim 3 is not unpatentable over Gonjo in view of Nishida. Reconsideration and withdrawal of the rejection of claim 3 under §103(a) is respectfully requested.

Claims 5-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gonjo as applied to claim 8, and further in view of Skala et al. (U.S. Patent No. 6,238,815) ("Skala"). Based on the foregoing discussion related to claim 8, claims 5-7 are believed to be in condition for allowance.

In addition, the Examiner has suggested that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a pair of screen support members mounted in proximity to the first and second end of the shell, as taught by Skala, in Gonjo's reformer. The Examiner provides no

explanation of the suggestion or motivation to combine Gonjo and Skala other than the assertion that "both Gonjo and Skala are related as both being reformers." This assertion fails to explain the suggestion or motivation to combine the references. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Therefore, claims 5-7 are not unpatentable over Gonjo in view of Skala. Reconsideration and withdrawal of the rejection of claims 5-7 under §103(a) is respectfully requested.

Claims 15-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gonjo as applied to claims 8 and 20 and further in view of Clawson et al. (U.S. Patent No. 6,126,908) ("Clawson '908"). Based on the foregoing discussion related to claim 8, claims 15-16 are believed to be in condition for allowance.

In addition, the Examiner has suggested that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a desulfurizing agent in the processing core of the reformer module, as taught by Clawson, in Gonjo's reactor. The Examiner provides no explanation of the suggestion or motivation to combine Gonjo and Clawson other than the assertion that "both Gonjo and Clawson are both analogous as they both teach a reforming reactor." This assertion fails to explain the suggestion or motivation to combine the references. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Therefore, claims 15-16 are not unpatentable over Gonjo in view of Clawson. Reconsideration and withdrawal of the rejection of claims 15-16 under §103(a) is respectfully requested.

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All of the stated grounds of objection and rejection are believed to have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes,

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for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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